
GENERAL ASSEMBLY

STATE OF MISSOURI

REPORT OF THE JOINT COMMITTEE ON MOTOR VEHICLE LICENSING

December, 1976

SENATE MEMBERS:

**Lawrence J. Lee, Chairman
Franklin Payne
Robert A. Young
George E. Murray
John C. Ryan**

HOUSE MEMBERS:

**Stan Thomas, Vice Chairman
Fred DeField
John E. Scott
O. L. Wallis
Claude R. Blakeley**

This Joint Senate-House Interim Committee was established pursuant to Senate Concurrent Resolution No. 37 adopted by the Second Regular Session of the 78th General Assembly. The Resolution is attached hereto as Appendix A to this report. Hearings were held on August 21st and September 16, 1976. Some 14 witnesses testified and numerous documents and exhibits were submitted.

Among those who appeared were Mr. A. Gerald Reiss, Director of the Department of Revenue, Mr. Russ Sloan, Director of the Division of Motor Vehicle and Licensing, Capt. Charles Endicott, of the Missouri State Highway Patrol's Traffic Division, Mr. Paul Collins, Director of the Division of Highway Safety, Mr. Nicholas T. Gordon, Jr. and Mr. William Lammers of the Flex-O-Lite Company, Mr. Thomas Nuckols, of the 3M Company, Sgt. Theodore Lewandowski, of the St. Louis Police Department, Chief James P. Damos, of the University City Police Department, Mr. Fred Fray and Mr. Ronald Edlund of the Safety Systems Division of 3M Company, Dr. Albert Burg, of U. C. L. A., Mr. Harvey Tettlebaum, of the Missouri State Attorney General's Office, and Mr. Robert Burgess, Traffic Law Systems Coordinator. Mr. John Glennon, of Midwest Research Institute, also appeared and presented a study on which comment will be made in a later part of this report.

Senate Concurrent Resolution 37 calls for a comprehensive study of all motor vehicle laws relating to the licensing of motor vehicles and operators of motor vehicles as well as the operation of motor vehicles on the streets and highways of the state. One of the most important considerations in this regard relates to the motor vehicle registration system which should be adopted by the State. The testimony at the two hearings cited centered around motor vehicle registration with additional comments pertaining to licensing of operators, odometer fraud and sentencing of traffic violators. The Committee identified several key issues which this report will address in turn including testimony relevant to these issues followed by Committee recommendations.

An important consideration in motor vehicle registration is whether a vehicle should have two vehicle plates (front and back) or one only (rear of the vehicle). Mr. Reiss stated that the Department of Revenue recommends the retention of two plates for each vehicle. Captain Charles Endicott of the Missouri State Highway Patrol's Traffic Division representing Colonel Sam Smith, both as Superintendent of the Highway Patrol and President of the Missouri Police Officer's Association, said that the position of those two organizations was to advocate the two plate concept. Mr. Paul Collins, Director of the Division of Highway Safety reinforced previous statements as supporting the two plate system. He indicated that over 90% of the police do also according to a recent survey as well as most other safety associations. Sergeant Theodore Lewandowski representing Lieutenant John Carnaghi of the St. Louis Police Department's Traffic Division definitely favored two plates per vehicle. Chief James P. Damos of the University City Police Department backed the two plate concept and submitted a copy of the resolution by the International Association of Chiefs of Police which reaffirmed their support for the issuance of both front and rear license plates. Mr. R. Dale Findlay, Executive Vice President of the Missouri Safety Council submitted a written statement part of which is excerpted here. "The Council has long advocated the use of fully reflectorized license plates on both the front and rear of motor vehicles", citing law enforcement and nighttime safety benefits as reasons.

The Committee recognizes that identification of vehicles from either direction is a necessity for full law enforcement capability involving stolen cars, vehicles fleeing a crime, fugitives at large as well as a myriad of other instances and situations. To revert to a single license plate would ultimately cost the State and its citizens not only economically but also in terms of personal safety and peace of mind.

It can be argued that because law enforcement needs are the predominant basis for a two plate system, that certain large trucks, which are usually more readily

identifiable by size and distinctive markings and are not often used in the commission of crimes in the manner of smaller vehicles, be excluded from the two plate requirement and bear only the rear plate.

Because of the widespread advocacy of the two plate system among law enforcement agencies and safety organizations with important benefits being accrued by its use, the Committee recommends the continuation of the two plate system in the State for at least all passenger vehicles and all other vehicles whose gross weight does not exceed 12,000 pounds.

The Committee further recommends that the law permit the issuance of preferred and/or personalized license plates for an additional fee of \$20.00 per registration. Based on experience of other states additional revenue of something in excess of \$250,000 should be realized.

Another question raised and discussed in depth was whether the state should continue to issue motor vehicle registration plates on an annual basis or adopt the multi-year system and if the latter, how many years per issue. Mr. Reiss testified that the number one priority recommendation of the Department of Revenue would be to return to multi-year license plates using an adhesive tab for validation in subsequent years. He said that extensive savings would be realized through reduced materials, reduced handling and storage costs, reduced postage costs and other savings. He pointed out that there is a national trend toward multi-year plates and that most states issue them for four years or longer. Sgt. Lewandowski reported that the City of St. Louis had experienced theft of validation tabs from the corner of plates by cutting off with tin snips. Mr. Fray presented a resume of states now using multi-year license plate systems. Currently there are 46 states with multi-year, only four states using the annual issue method. Legislation is pending in

two of these four to change to multi-year. States using the multi-year system universally report savings, not only in funds but also in critical materials and energy, with no major problems arising in the use of validation stickers and tabs.

The Committee learned that the State of Illinois had recently made a study of multi-year licensing and, in view of the recommendation made by the Missouri Department of Revenue, a copy was obtained from the Secretary of Illinois. It is entitled "Report on Multi-Year License Plates for State of Illinois". It is a thorough study, the results of which are reflected in a 77-page document, and it is recommended to any Standing Committee which may consider legislation on this subject. Those responsible for the research in Illinois concluded:

- (1) The heavier gauge materials used in multi-year plates cost less per plate per exposure year than the annual plate.
- (2) Mailing plates once every few years rather than annually will result in savings.
- (3) Economies will be achieved in the warehousing of multi-year plates.
- (4) Economies will be achieved in the area of personal requirements for multi-year issuance.
- (5) Loss factors from so-called "dead stock" on the annual issuance plates would be eliminated.

Extensive cost studies performed in Illinois revealed that a three-year plate would save in excess of five million dollars and that a five-year plate would save approximately twenty-one million dollars.

Based on testimony, consideration of economies in funds, materials and energy that result from the multi-year system and the fact that counterfeit-proof, vandal resistant validation methods are operating successfully in many other states, the Committee recommends the State go to a multi-year license plate issue. Based

on evidence presented and the experience of a number of states now in the program, the optimum period of issue appears to be at least five years.

Another topic for which testimony was heard was whether or not motor vehicle registration plates should be reflectorized, and, if so, which system of reflectorization should be adopted. The preponderance of testimony favored reflectorization in one form or another for added night legibility and safety. Those favoring reflectorization among others were Mr. Reiss, Mr. Sloan, Sgt. Lewandowski, Chief Damos, Dr. Burg, Mr. Glennon, Mr. Nuckols, Mr. Gordon, Mr. Fray and Mr. Findlay. In addition, resolutions by the International Association of Chiefs of Police and the National Sheriff's Association reaffirming earlier resolutions and calling for reflectorization to improve long range visibility and legibility of plates were presented. It was pointed out that the present law increased the registration fee to cover the cost of reflectorization and that if, at any time, an inferior process is used because of lower costs, the people are being charged for something they are not receiving. The Committee feels that the Department of Revenue should purchase whatever materials it deems best but that the people should get full value for what they are paying.

The Committee encountered various words to describe the way light is reflected from surfaces and thought it important to clarify what is meant by each word or term. "Reflective" technically can apply to virtually all surfaces, even very dark objects, in that some of the light that falls on the surface is reflected in various directions away from the surface. All objects are seen by the eye by variations in this reflected light. However, the term "reflective" has come to be associated with a type of reflection that would be more technically correct to call "retro-reflection" or "reflex-reflection". When light strikes a "retro-reflective" surface a substantial portion is directed back in a narrow cone to the light source with very little being scattered

at all angles such as encountered with normal painted surfaces. To accomplish this, small lenses such as glass beads are used. Both methods normally used for reflectorizing motor vehicle registration plates, the beads-on-paint method or the reflective sheeting method, use glass beads and both are "retro-reflective". The differences lie in the degree of brightness, durability and all weather performance possessed by each. "Reflectorized", as commonly used, refers to a surface which has been made "retro-reflective", whether by beads-on-paint or reflective sheeting.

When there is any ambiguity as to meaning, the Committee recommends that the word "retro-reflective" be used instead of "reflective".

In further testimony, Mr. Reiss recommended that reflectorized plates be required, either fully reflectorized or numerals only and that any legislation should permit all companies which manufacture materials to bid competitively. A survey conducted by the Department of Revenue with 300 Missouri citizens showed that two-thirds felt reflective plates are necessary. Several witnesses pointed out that 47 states plus the District of Columbia issue or have laws providing for reflectorization as do 57 foreign countries. Three states, Michigan, Colorado and Missouri use the beads-on-paint method, Connecticut has both beads-on-paint and fully reflectorized sheeting plates and 43 states plus the District of Columbia use fully reflectorized sheeting.

Dr. Albert Burg was a highly qualified technical witness who has devoted most of his adult life to highway safety, has done much research on the subject and has written and lectured extensively. Dr. Burg pointed out the need for greater night visibility of vehicles. A number of safety studies which Dr. Burg has analyzed all show a positive effect for a fully reflectorized plate leading to the conclusion that full reflectorization is the most satisfactory method from a visibility and safety standpoint. Parked cars are the objects most frequently struck by other vehicles

along the roadway (not poles, trees or guardrails) and a reduction in these commonplace accidents would be highly desirable.

Mr. Sloan testified to the use of beads-on-paint as being satisfactory for the reflectorization of license plates. This method, Mr. Sloan pointed out, reflectorizes the legend only, not the entire plate, and is less expensive to the State.

Mr. Gordon suggested that the State run a test by using 50,000 each fully reflectorized plates, beads-on-paint plates and paint-only plates to determine performance in use including durability and accident experience. Among exhibits submitted to the Committee was information on a study conducted in the State of Virginia in 1971 where a 100,000 vehicle sample was used and it was determined that no significant evidence could be developed. Professor Melvin L. Moeschberger of the Department of Statistics at the University of Missouri, Columbia analyzed the Virginia study and concluded that even a 100,000 sample size was too small based on night accident rates and a much larger sample would be required to detect accident reduction at practical levels of interest.

Mr. Glennon of Midwest Research Institute of Kansas City, Missouri testified and also submitted a state-of-the-art report he had prepared. He stated that by way of background, in the late 1940's two New England states were first to issue reflectorized plates. Since that time many states and foreign countries did the same. Through the years it was determined that reflectorization had real value and it was found that reflectorized license plates provided a method by which greater visibility of all vehicles - new and old - could be achieved. The study showed that the increased legibility is needed to meet the nighttime requirements for identification of vehicles by police officers, while the increased visibility serves as an effective back-up system for vehicles with malfunctioning or inoperative lighting systems. The Midwest Research Institute report states, "In comparing the performance of the two major reflective materials for license plates the evidence is also clear. Reflective

sheeting has considerably better performance than beads on paint materials in reflectivity, visibility, durability and resistance to the effects of surface moisture, dust and grime The reflectivity of license plates with reflective sheeting is about ten times greater than plates with beads on paint materials. Also for entrance angles beyond 20 degrees, license plates with reflective sheeting have greater reflectivity than the reflex-reflectors required as standard equipment on motor vehicles The reflective sheeting is the only reflective (plate) material that conforms to the SAE standard for reflectors."

"Although the durability of reflective materials is an important consideration for annual plates, it is of major consequences for multi-year plates. Results of accelerated weathering tests indicate that license plates with reflective sheeting are considerably more resistant to the effects of adverse environmental conditions than are plates with beads on paint materials. With the simulated exposure to extended use under adverse environmental factors, the beads on paint materials sustained substantial losses in reflectivity while the reflective sheeting material had almost no change. In other accelerated weathering tests, which rated the surface adhesion and appearance to plates with pre-scratched surfaces, the reflective sheeting plates demonstrated dramatically greater resistance to corrosive discoloration and loss of surface adhesion Another area of performance relates to the deleterious effects of surface moisture, dust and grime on license plates. With surface moisture present reflective sheeting plates suffer a light loss of reflectivity while beads on paint plates sustain moderate to almost complete loss of reflectivity".

Mr. Ronald Edlund presented data showing that under moving conditions, especially at higher speeds, the fully reflectorized plate which is basically brighter, has better legibility than beads-on-paint plates. He also pointed out the superior performance of the fully reflective sheeting plate when wet and after extended use.

The Committee reviewed testimony and concluded that state license plates should be reflectorized with durable materials capable of maintaining good performance throughout the period of issue.

Further field testing of the two systems of reflectorization as suggested is not felt to be appropriate or needed since extensive testing of the two systems has already been done; the State, in fact, having had experience with both retro-reflective systems. Enough data exists to make the necessary decisions and considerable difficulty would be involved in conducting a large test with sufficient control. From testimony heard it appears that the beads-on-paint system has lower initial cost but does not perform as well as the fully reflective sheeting plate either initially or after a period of use, especially after extended periods of use. The fully reflectorized system has advantages over the beads-on-paint system in visibility, legibility, durability and overall performance. The cost per year of the two systems, taking into account all costs, should be considered. When total costs are prorated over the useful life of the plates, the costs per year of the fully reflectorized system and the beads-on-paint system are not far apart.

Because of the large benefits and savings involved, the Committee completely endorses the reflectorization concept and the multi-year concept. To assure that any materials purchased conform with established standards for the lifetime of the plate, the successful bidder should be required to post a performance bond with the State. Based on testimony adduced it is recommended that throughout its lifetime up to and including at the end of five years, each registration plate shall meet the minimum nighttime performance standard in dry and rainfall conditions that would provide for at least 600 feet visibility and 75 feet full legibility under standard lawful low beam headlights and at least 50 per cent retention of initial minimum brightness specification value.

Other issues and ideas were addressed by testimony before the Committee.

Chief Damos spoke in behalf of a resolution made by the International Association of Chiefs of Police which calls for an individual's drivers license number to correspond with the person's social security number.

Mr. Tettlebaum of the Attorney General's Office made a presentation regarding odometer fraud. Practices permitted by current law result in a \$16 million per year cost to Missouri consumers which changes in the law might prevent. He suggested that the mileage appear on the title above the signature of the seller as one device that might be helpful.

Mr. Burgess, Traffic Law Systems Coordinator, proposed that judges be given authority to assign drivers to educational activity for certain types of offenses such as DWI, particularly when the driver is under twenty-five years of age. He also suggested that the Department of Revenue have the right to issue limited licenses to individuals who had suffered a revocation providing they take a prescribed driver education course.

In sum total, considering testimony received and evidence reviewed the Committee recommends that:

- (1) The Legislature adopt the multi-year system for motor vehicle registration plates, two plates per vehicle, for at least all passenger cars and vehicles not exceeding 12,000 pounds in weight, such plates to be made retro-reflective according to standards and specifications set down by the State Highway Department and Department of Revenue, for a minimum issue term of five years and that throughout its lifetime up to and including at the end of five years, each registration plate shall meet the minimum nighttime performance standard in dry and rainfall conditions that would provide for at least 600 feet visibility and 75 feet full legibility under standard lawful low beam head-

lights and at least 50 per cent retention of initial minimum brightness specification value. To insure this performance a successful bidder shall provide a performance bond to the State of Missouri equal in total to the bid award plus \$1.00 potential non-compliance penalty for each registered vehicle. Methods of determining registration plate failure and degree of non-compliance at any point in the lifetime of the plate shall be determined by the Department of Revenue and be part of the specifications in invitations to bid for materials.

- (2) The Legislature consider the desirability to use a person's social security number as the driver license number.
- (3) The Legislature consider amending current laws in accordance with suggestions made herein to avoid odometer frauds which allegedly are taking place currently.
- (4) The Legislature consider that for certain traffic offenses such as DWI, a judge be given the authority to assign educational activity requirements in lieu of regular sentencing.

SENATE CONCURRENT RESOLUTION NO. 37.

WHEREAS, the general assembly from time to time is called upon to revise legislation dealing with the licensing of motor vehicles and the operators thereof; and

WHEREAS, such legislation directly affects the health and safety of all the citizens of this state; and

WHEREAS, the general assembly should have the benefit of a comprehensive study of all the motor vehicle laws relating to the licensing of motor vehicles, the licensing of operators of motor vehicles, and the operation of motor vehicles upon the streets and highways of this state;

NOW, THEREFORE, BE IT RESOLVED by the senate of the 78th general assembly, the house of representatives concurring therein, that a joint interim committee be established to thoroughly study and examine such laws to the end that the general assembly as a whole may have the benefit of ideas and proposals which may be presented in relation thereto; and

BE IT FURTHER RESOLVED, that the committee be composed of five senators appointed by the president pro tem of the senate and five representatives appointed by the speaker of the house; and

BE IT FURTHER RESOLVED, that this committee be charged with the responsibility of examining all the laws of this state which deal with the aforementioned subjects, and that the committee be directed to make a formal report of its findings to the general assembly prior to December 1, 1976; and

BE IT FURTHER RESOLVED, that the committee be authorized to call upon any of the members of the staff of the senate or the house or agencies thereof for assistance in conducting its study; and

BE IT FURTHER RESOLVED, that the actual and necessary expenses of the members of the committee and members of the staff assigned thereto, incurred in attending any meetings of the committee or in conducting investigations therefor, be paid from the joint contingent fund.

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